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ABSTRACT

A study surveyed the industrial status of the Pittsburg State University School of Technology and Applied Science female graduates of classes that graduated from 1976-1987. The data collection procedure consisted of two phases--a literature review pertaining to sex equity for women in technology and the survey of graduates at the bachelor and graduate levels. Of the 171 survey instruments mailed, 15 were returned as undeliverable; 45 completed surveys were returned for an approximate return of 29 percent. The majority were gainfully employed in full-time positions that used their college education. The largest percentage of the respondents worked in firms with 11-25 or 201-500 employees. Most had been at their present job from one to three years, with over half in nonsupervisory positions. The employers provided average fringe benefits for female technologists. Most reported that employers had a favorable outlook on pregnancy leave. Children who needed day care were tended by a private party. Many respondents were purchasing single-family dwellings. Most had made their career choice at the age of 20 and had planned their choice. Many felt their college education was adequate preparation for their postgraduation jobs. Most would recommend a career in a nontraditional field for an interested woman. (The instrument and data summaries are appended.) (YLB)

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THE EMPLOYMENT STATUS OF PITTSBURG STATE UNIVERSITY FEMALE TECHNOLOGY GRADUATES

A Thesis Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Degree of Master of Science

By

Cynthia Lou Stevens Selzer

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The author wishes to dedicate this study to her three children. Remember -- don't ever stop reaching for the stars. If you have no dreams, you have NOTHING!

Cyndi L. Stevens Selzer

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CHAPTER I

INTRODUCTION

Women have always worked. Their participation in the workforce has grown to such an extent that their experiences and contributions to the economy can no longer be regarded as unimportant. Paid or unpaid, they are not strangers to the hardships of long hours or strenuous labor. Most women are well acquainted with work's challenges and rewards.

> There is a nobility about hard work. Even the weariness it leaves is exhilarating. Hard work is not hard work to the enthusiast. It is intoxicating. The privations. The hardships. The long days and long nights. All are worth the price, and the price is worth it -- results and success. To win requires hard work and iron resolution. And supreme effort and self-sacrifices. The power of work and the sense of duty brings no greater joy in life.
>
> Jerold Panas

Statement of Problem

As a female graduate from Pittsburg State University's School of Technology, the researcher was interested in knowing how female graduates the University is educating are faring in the world of business and industry.

Pittsburg State University has been educating and granting degrees to women, for quite some time, in many fields. Women, however, with bachelors or masters degrees in any field of technological studies, are extremely low in numbers. Pittsburg State University is well known, even to the point of international recognition, for its programs in the different areas of technology. With the numbers of female technology graduates so low it seemed important, in attempting to encourage other prospective female technology students, to be current with these role model graduates, in knowing locations, job titles, job descriptions, rates of pay, fringe benefits, work conditions and situations, work satisfaction, employer contact, etc.

This research was used to formulate a report, with the analysis of the tables depicting the responses survey, which was mailed to former female graduates of the School of Technology and Applied Science at Pittsburg State University.

Questions To Be Addressed

1. How well have the female graduates from the Pittsburg State University School of Technology survived in the industrial world?

3. Do these women feel they have been given the opportunity to achieve equal to male peers?

4. Have female PSU School of Technology graduates received regular pay raises and position advancements?

5. Have these female graduates' jobs been held for them to return to after a maternity leave?

6. Are PSU female technologists happy at and satisfied with their jobs as technologists in male dominated fields?

7. Would these women change the requirements for a bachelor's degree in their field of technology or would they change anything in the curriculum for their field?

8. If given an opportunity to go back in time and change their career choice and education, would any of these female PSU Technology graduates change their decisions and what would those changes be?

9. What are the graduates' salary ranges, both, in their current position and in their first post-graduation position?

10. Are the female graduates accepted by their peers on the job?

11. If the graduates are also parents, what child care arrangements have they made? Are their employers willing to do anything to assist in the way of locating sitters, creating in-plant day-care situations, etc.?

12. What are the respondents' family backgrounds pertaining to single or two-parent upbringing? Could the women expect support, and from whom, no matter what interests they pursued?

Definition of Terms

Technologist- was assumed to be referring to a female specialist in some field of technology.

Graduates- were assumed to be of the female gender unless otherwise specified in this research material.

Nontraditional- programs were considered so because of gender disadvantages.

Limitations

The challenge of this study is not in the review of the literature, as there was an abundance of material on sex equity issues available, nationwide. The most challenging portion of this entire study was in locating the graduates. It has been womankind's prerogative to get married, therefore, changing her last name. Most of the female graduates have kept the University current on their addresses and their name changes so the study continued to progress smoothly. However,the researcher intended to pursue the graduates by whatever means was necessary to locate them (i.e. teleconversation, calling their parents for a current name change and/or address, using Alumni Center records, etc.).

This researcher, in reporting the findings from the survey instrument, can not be sure the respondents were telling the whole and complete truth, especially since the survey was mailed to the graduates.

The researcher had to assume, because of the nature of the busy work world, that some of the people that responded did not respond to all the questions. The survey instrument's findings have been reported in Chapter IV, Findings.

Delimitations

The group of women receiving the survey instrument are Pittsburg State University School of Technology and Applied Science graduates from the years 1976 to 1987. The researcher did not know at the writing of the prospectus how many women graduates there had been, nor was she able to estimate. The researcher surveyed all the graduates that could be located. However, the researcher reserved the right to change the 100% mailing to an adequate random sampling if the number of graduates was large enough to either be a tremendous mailing burden or if the number was just too large to be a justifiable mailing.

Significance of Study

This research was initiated because of the felt need and concern of the Pittsburg State University School

of Technology and more specifically, the Printing Department. As a 1977 PSU School of Technology graduate the inquiry into this project made the researcher intensely curious as to what other female graduates from PSU's School of Technology have found in the industrial world -- whether the researcher experienced the norm or the exception. What was expected?

Even though the Department of Printing has been able to stay in relatively close touch with their graduates, due to the annual celebration of Printing Week, the department was inquisitive as to how their graduates have been doing. Needless to say, not all graduates have stayed in touch and kept their different departments informed about their jobs, situations, or whereabouts. There was a considerable amount of time spent in gathering adequate and accurate addresses for dissemination of the survey instrument.

The end result the researcher looked to achieve, other than disseminating the survey instrument and formulating the thesis, was a six or eight panel sex equity brochure for the School of Technology and Applied Science. The brochure would describe the degrees and areas of study the University now offered in technology with special attention being paid to encouraging any young woman reader to give serious thought, rather than a passing one, to a career in a field of technology.

CHAPTER II

REVIEW OF LITERATURE AND SIMILAR STUDIES

Women have been active creators and innovators down through history though most of that knowledge of women's roles as technological developers has been erased.

Several writers, anthropologists and historians make the point that women were at the forefront of technological innovation. Women, most logically, invented tools and methods for food gathering, processing and storage. Women, motivated because of their historic roles as gatherers and their need to carry/transport food, have also been accredited with the innovation of horticulture. One of the most important inventions, of all time by woman, was contraceptives. Women could also be attributed with initial systems of social organization.

The earliest recognized female technological workers referred to in history were two individual women, Maria and Hypatia, who as female relatives of inventors, were slighted and ignored by historians. Shaker women, also early technologists, were liberated by their own invention of such tools as the buzz saw, cut nails, and the revolving oven.

Secondary Education as Related to Nontraditional Schooling

There are 95% more boys than girls in technical subjects at the secondary school level. Kelly states, "This means that girls are disadvantaged in a technological society, not only in the search for jobs, but also as citizens who need to understand and control their environment." (9, 42) Yet, another author writes, "There is a need for awareness by high school and pre-entrance college advisors that there are other career possibliities for females other than nursing, secretarial or teaching. Teachers tend to help women too much and project a failure attitude toward women." (5)

A typical, traditional attitude would be displayed by this Heller statement, "A man should be more intelligent -- if she is more intelligent I resent it." (6, 12)

Heller describes the male sex role as "superior to the female in aggressiveness, self-assurance, decisiveness, independence and stability in the face of stress." (6,14)

Many institutions have good programs in technology, they just do not generally encourage women students to even try. (1, 13)

"Attitudes and approaches of all educators must be altered to achieve sex equity in education and

employment.(8, 36) There is no factual evidence to support the theory that people seeking nontraditional jobs are probably homosexual. (8, 40) Women make a significant contribution to the economic welfare of the nation."(8, 41)

"We need public awareness to educate people about realities women face in the work force today." (2, 7)

Poverty is not feminine or masculine or human.

Nontraditional Roles vs. Traditional Roles

Today, women entering the workforce face a wide range of choices and alternatives in both, traditional and nontraditional work roles. "Sex appropriate" roles, such as secretary, nurse, service or domestic worker, and teacher, give a reassuring sense of identity. Historically these traditionally "women's" jobs have drawn women away from the nontraditional "men's" jobs. Labor trends and social pressures have contributed further to the division between male and female job markets. Today that trend is changing as more and more women gravitate toward nontraditional occupations that will offer them not only monetary rewards but personal rewards as well--ones that are not always available in traditional women's jobs. Nontraditional female workers are establishing an identity for themselves in the male dominated work world of mechanics, carpenters,

construction workers, technicians and engineers of all kinds. For many of them, the blue-collar sector of the working world is ripe with incentives, ranging from higher pay to training and advancement opportunities. Of the over 12.5 million female employees in industrial and service occupations today, over 18% are blue-collar workers. (12, 1-2)

Female movement into nontraditional jobs is fairly new in America, originating on a small scale during World War I and recurring on a much bigger scale with the influx of women into industry during World War II. For the first time, women were admitted to the urban industrial working class to fulfill an obligation to their country. The increase in war production and the scarcity of male workers produced a need for an alternate work force. Forced to work due to the loss of the family's wage earner, many women who were previously discouraged after the depression's lack of jobs, were encouraged by the availability of new jobs. Likewise, poorly paid female service workers, domestics, and sweatshop workers also gained access to industrial jobs previously open only to men. Women assumed, without exception, the diverse work roles formerly held by men. In a relatively short period of time, they proved that they were fully capable of nontraditional industrial and skilled labor.(17, 19)

After the War, upon returning to America, servicemen sought to regain their industrial jobs so these women were forced to return to their previous employment, homemaking, or unemployment. Their displacement was generally supported by employers, unions, and the government which regarded women as temporary fill-ins for the male workers. Women were pressured into relinquishing their jobs when their work place shut the doors on the government funded child care facilities. (12, 2-3)

The World War I shift in employment signified that women were adequately prepared to perform skilled and semi-skilled physical labor and technical jobs that had previously been identified as exclusive to men. It helped, somewhat, to obscure the boundary between what was considered appropriate male and female work roles. Most importantly, it dispelled myths that women cannot do men's work; women are more frequently absent than men; women have a high job turnover; and that women allow marriage and children to interfere with employment. (12, 3)

Despite the fact that the additional work force was demanded at the time, men reacted strongly to the intrusion of women into their sacrosanct domain. For these pioneer nontraditional workers being a woman in a man's world was a challenge, indeed. Typical barriers

the pioneers had to overcome were adapting to heavy physical labor, new surroundings, a coarser environment, and hostile, nonsupportive attitudes of co-workers. At this time women were paid less than men because of the erroneous assumption that they could not do the heavier jobs. Women were often forced to adhere to stricter safety requirements. They were not promoted as frequently as men and were told that after the war was over they would not be needed. In a grease-stained pair of cover-alls and a hard hat a woman was regarded as a freak by female counterparts who retained their traditional work roles. (12, 4-5)

Naturally, during the period immediately following the war, the percentage of women in industry declined, but the actual number of women in these jobs increased because the total number of women working rose dramatically. The proportion of women in blue-collar jobs dropped from 21% in 1950 to 16% in 1974, but numbers increased by more than a million to 5.3 million. Even so, by the mid-1970's only about 2% of all employed women were holding jobs in the skilled trades. (12, 5)

As women continue to enter the work force in increasing numbers, a trend toward nontraditional employment is growing out of their personal need to survive and earn a decent income in an inflationary society, where there are more and more single women

trying to provide a "decent living" for themselves and their children. The average annual wage of women is still far below that of men, largely due to the fact that women workers are concentrated in low paying, dead-end jobs. Fortunately, with the support of late 1960's and 1970's civil rights legislation prohibiting discrimination in hiring, the blue-collar woman is re-emerging. Between 1970 and 1980, according to the U.S. Bureau of Census, the percentage of women with children under 18 who held paying jobs grew from 41% to 55%. Working mothers have been the fastest growing component of the job market for some time. In the mid-1970's, women represented about 18% of the 29 million blue-collar employees in America. Women joined the labor force throughout the 70's at an average of over one million annually. While most women found employment in traditionally female occupations, many were making tremendous advances in the growing industrial area. Almost a half a million women were employed in skilled occupations in 1970 as compared to 277,000 in 1960. The rate of increase in employment in these occupations was twice that for women in all other occupations and eight times the rate of increase for men in the skilled trades. The number of working mothers has increased more than tenfold since the period immediately following World War I. (12,7-8)

Today, women face a rapidly, ever changing world marked by a decrease in family size, an increase in female-headed families, and a greater likelihood of full-time rather than part-time employment. There will, more than likely, be a much larger percentage of women working during their childbearing years. Researchers have forecast that by the middle 1980's there will be some 50 million women employed on a full-time basis. Department of Labor figures show that 43% of all women working today are single and most work to support themselves. Over 75% of women between the ages of 20 and 24 are expected to participate in the work force by the mid-1980's. Nowadays the single parent family with women as heads of families is a growing trend. In 1977, nearly 1 out of 7 families was headed by a woman. The 1980's have brought that figure to a 1:4 ratio of female heads of households. A norm of the past was that of the single-earner, husband-supported family with 2 children. That past norm represents less than 2% of husband-wife families in America today. (12, 8-12)

What Are the Chances...?

The chances of encountering a female pilot, mechanic or plumber...are almost non-existant. Since women compose 40% of the American labor force one would expect them to represent 40% of most occupations.

Figures available lead the researcher to believe this is certainly not true. (13, 35)

Seventy percent of employed females are clustered in low paying service, clerical or factory work. This percentage figures out to approximately 37 million women employees. Where are all these women working? (13-35)

The percentages of men to women in certain occupations are as follows: 90% of banktellers are women; 97% of domestic servants; 99% of secretaries; less than 5% of all craft workers; less than 1% carpenters, truck drivers, brickmasons, mechanics, plumbers and firefighters.(21, 7)

Yet another source reports that 80% of librarians are female; 97% of nurses; 96% of demonstrators; 80% of clerical workers, 71% of teachers in grades K through 12; 70% of sales clerks; 98% of dressmakers; 80% of hairdressers; 68% of unpaid family workers; 90% of waitresses; and 97% of service workers in private homes. (11, 4)

Forty-three percent of working women support themselves, and an additional 23% are married to men who make less than $10,000 per year. (11, 4)

Women with lifelong commitments to careers are today's norm. Women in nontraditional careers such as engineers, mechanics, construction workers, and plumbers discover that the male-dominated work forces differ

greatly from the female-dominated jobs as far as wage earnings go. For women, one of the primary motivating factors in seeking nontraditional employment is pay equity. Pay has consistently been a startling example of inequality in male and female employment over the long term.

From research it was discovered that in 1939 women's median earning in the experienced labor force were 58% of men's. In 1974, a woman with a 4-year college degree had a lower income than a man with an 8th grade education, and she earned 57 cents to every dollar earned by a man. By 1981, earnings for the female work force were about 59% of the median earnings for men. In 1984, female professionals earned 75 cents to the male dollar. Projected 1985 median incomes show that a Trade and Industrial supervisor will receive an average annual income of $25,000 compared to a traditionally female secretarial position which will average only $11,000. Even though women today account for over 44% of the work force, 80% of them work in traditionally female, low-paying jobs and one-third of these are in the poverty group. The reality is that mechanics, welders, painters, and tool-and-die makers earn far more than cashiers, waitresses and secretaries. (13, 37-40)

Other incentives attractive to women desiring to enter blue-collar skilled trades are training and

advancement opportunities. In a trades occupation the training requirements are generally lower than those for a white-collar profession and usually involve a maximum of 2 years of technical training at the community college or junior college level. Most vocational/technical training programs are designed to lead directly to employment. On-the-job training is also available in many blue-collar fields, and some programs are geared specifically to nontraditionally female jobs. (12, 12)

There are many avenues available to women who would like to get into a nontraditionally female job. One of those avenues is apprenticeship training, for women who cannot return to school full-time but who wish to acquire skills in trade areas. A woman can begin apprenticeship training with no experience and earn an income, usually higher than in traditionally female jobs, while receiving classroom and on-the-job training. Apprentices usually start out earning 50% of a full journeyman's wage. As more skills and experience are gained the wages rise progressively, usually to 90% of a journeyman's wage. Withing 4 to 6 years, a woman can achieve journeyman status and earn anywhere from $13 to $18 per hour or higher. Certain federal programs encourage women to enter the nontraditional job market in order to meet Equal Employment Opportunity requirements. An example of one such apprenticeship is in Pearl Harbor, Hawaii. The

Federal Women's Program provides apprenticeship training in 17 trade areas ranging from fabric worker, ship fitter, and sheet metal worker to electrician and welder. That program consists of 4 years' training, combining work with classroom study. The program is also working to increase the number of women in middle and upper management positions. (13, 35)

Some of the barriers which deny equal access for women in fields of technology are internalized sex-role stereotyping, lack of female role models, peer pressure, attitudes and stereotypes held by parents and support groups. Other barriers include attitudes of school personnel, lack of support techniques for sex equity, lack of exposure to and preparation in skills areas, and the lack of adequate career education. (16, 19)

Successful Nontraditional Plumber's Apprentice

Sheryl Landford - plumber's apprentice at Maricopa County Community College broke tradition - she was the only woman in the plumber's apprentice program. She began her training in 1980 with training modules, classroom instruction and field experience. Ms. Landford had to prove herself to a "somewhat resistant all-male work crew." Her advice to students: "Don't be turned off by the stereotypes of non-traditional training and employment. Look at the benefits and keep your options

open. After all, who says you can't?!" (13, 37) According to the literature, when Ms. Landford completes the program she plans to continue at her present job there on campus, working from 6:00 a.m. until 2:30 p.m. at the rate of $30,000+ per year. (**Notice** working hours and salary) This is only one of several programs being undertaken and implemented for women and men desiring to enter non-traditional occupations in Arizona. (13, 39)

Another such program is the Federal Work Incentive Program (WIN). This program was designed to provide employment and social services to enable recipients of Aid to Families with Dependent Children (AFDC) to move from welfare to work. One such project involved an 18 to 21-month electronics technician training program that had a 90% placement record at an average starting salary of over $10,000. Apprenticeship programs were expanded to allow women to enter skilled trades. By 1977, there were women apprentices in 200 out of 450 occupations recognized as apprenticeable by the Department of Labor. Further assistance was initiated when the Office of Federal Contract Compliance set a goal for construction companies with federal contracts to hire 102,000 women by 1979 and another 230,000 by 1980. (12, 8)

Despite U.S. government support of women in nontraditional employment, the United States is still the only major industrialized nation with no family policy,

no government-supported child care except for the very poor, and no help for parents beyond a few income tax deductions, which are becoming fewer as each tax year passes. In 1977, 5.3 million working mothers had 6.4 million pre-school children under the age of 6. Many women believe that their opportunity or their ability to cope with the dual responsibilities of home and career are hampered by the lack of day-care facilities. (12, 8)

Yet another incentive for women to earn better salaries is credit eligibility. Even today, most banks assume women will fail to advance as far in their jobs as men and will have less earning potential. Lending institutions regard a woman's salary as a supplement to her husband's wages. (12, 9)

Besides the financial, promotion and training advantages inherent in most blue-collar jobs, there are other reasons women seek nontraditional employment. Many find that "women's" work is not interesting or challenging enough. Contrary to common belief, many women do not dislike "dirty" or physical work. Many enjoy it and are good at it. Nontraditional female workers like their jobs because they are physical, free, outdoors in some cases, and involve teamwork and working with men. These women derive a feeling of accomplishment not always found in traditional female jobs. They seek in their work what men have been finding all

along--feelings of competence, productivity and being a contributor as well as being in control of their time and energy. Their pioneering effort in blue-collar employment has found a departure from the routine and mundane work characteristic of conventional, non-professional female occupations. (12,9-10)

Admittedly, not all women are equipped physically, emotionally or mentally to perform manual labor. Neither are all men. However, women are discovering that certain aptitudes predispose them to accomplish tasks, successfully, which require manual and finger dexterity, motor coordination, and eye-hand coordination. Although women are at an upper-body strength disadvantage relative to men, they are able to compensate through training with weights and physical exercise. When asked, most health experts feel that the average female will never be as strong as the average male, yet the disadvantage this poses for women in heavy construction is largely offset by modern technological advances designed to reduce overly demanding physical strength tasks. (12, 10)

As more and more women enter the skilled trades and create an identity for themselves attitudes are changing. The stereotype image of the tough, foul-mouthed, masculinized female construction worker is becoming less of a stereotype as women fit into these jobs and retain their femininity. Even so, sexism and discrimination

still present problems for today's nontraditional woman worker, just as they did for their World War II predecessors. Though not specifically intended to address issues in nontraditional employment, legislation has reinforced the position of women in terms of civil rights and employment equity. (12, 10-11)

Sexual harassment on the job is no longer considered a "personal problem" for women but an employment issue. Sexual harassment policies demand much attention today with the increasing sensitivity to women's rights on the job. Female workers no longer have to tolerate discriminatory treatment or sexually offensive behavior. (12, 11)

The most dramatic influence seen on the acceptance of women in nontraditional employment is the women workers themselves. The modern day work force sees a new breed of confident, competent and determined women who are bringing their feminine mystique with them to their place of employment. Women are being constantly encouraged by career education counselors and nontraditional role models to consider vocational alternatives such as nontraditional training and employment. Labor forecasts indicate that women will have many jobs available to them in the skilled trades. By 1990, anywhere from 54% to 60% of all women will hold paying jobs outside the home. (20, 4)

Women who cross occupational boundaries to enter the nontraditional work forces are part of a wave of the future. These women are pioneers and take risks in revolutionizing the working world. They are revising the meaning of male and female work. The impact of their revolution is being felt in society as a whole, in their homes, and in the way women perceive themselves as workers and as human beings. It is possible that in the near future there will be no need for terminology such as "nontraditional." The researcher will look forward to a day when women and men will share and share alike equal status and involvement in the work world.

SUMMARY

Considering the intense interest in promoting training for nontraditional occupations, relatively little research on the post-training labor market experiences of sex nontraditional students has been reported. There is, of course, literature supporting claims 1) that women have an earnings disadvantage 2) that females have been under represented in vocational training and 3) that vocational training programs were traditionally single sex oriented. (20, 4)

The preparation for employment the vocational education system is providing often excludes persons that can and should benefit from such training. (15, 9)

CHAPTER III

RESEARCH METHODS AND DATA COLLECTION PROCEDURE

This chapter describes the population reached by the survey instrument and the methods used to collect, tabulate, analyze and illustrate the data.

Selection of the Population

At the beginning of this project the researcher's intentions were to survey the female graduates from 1976-1987 from all technological areas. Several limiting factors surfaced; (1) women were hard to locate due to changing their names by marriage, (2) unidentifiable addresses, (3) prohibitive mailing costs due to both, the cost of postage and the extensive number of technology graduates to be surveyed.

Population

The population utilized for this study included female graduates at both the bachelor and graduate levels, from the years 1976 to 1987, who received their degrees from Pittsburg State University in some facet of technology or some technology related field.

Data Collection Procedure

The data collection procedure for this study was divided into two (2) phases:

Phase I consisted of a thorough search and evaluation of pertinent related literature pertaining to sex equity for women in technology. The data obtained from those various sources are reported in Chapter II.

Phase II consisted of a survey instrument which was developed by the following procedure. A preliminary questionnaire was prepared and pilot tested to evaluate both, the clarity and appropriateness. A pilot test, utilizing five (5) female printers was conducted. Following the pilot test, survey items that proved to be undesireable were revised or eliminated. Approval from the researcher's Thesis Committee, with additional support from the Dean of the School of Technology and Applied Science and the Director of Equal Opportunity and Affirmative Action, was obtained prior to the distribution of the surveys to the identified population. Every attempt was made with the labeling and mailing procedure to assure as great a return as possible on the survey instrument. Other than by mail, the methods used to contact surveyees were: (1) contact with the alumni association, (2) contact with the surveyees' parents, (3) contact with surveyees via the telephone.

By implementing these contact methods the researcher felt she obtained maximum returns.

Methods

The completed, returned survey instruments were subjected to an individualized evaluation.

During this evaluation, the raw data was taken from the survey sheets and recorded on work sheets, devised from unused questionnaires. This analysis evaluated the responses from each item included on the survey instrument.

The survey instrument, shown in Appendix A, was mailed to each of the identified female Pittsburg State University School of Technology and Applied Science graduates. Upon receipt of the responses, the researcher tabulated and analyzed the results from the survey. All results have been represented in either an appendix or table form or discussed.

CHAPTER IV

FINDINGS

Of the 171 survey instruments mailed, 15 were returned as non-deliverable for a variety of reasons. Forty-five of the remaining instruments were returned for an approximate return of 29 percent.

One of the items the researcher was interested in knowing was the percentage of respondents who were gainfully employed at the time of the survey. Ninety-three percent of the respondents reported that they were employed.

Sixteen percent, or 7 of the respondents began their first post-graduation job in 1984, 13 percent or 6 in 1985, 11 percent or 5 in 1987, 7 percent or 3 from the years 1980, 1986 and 1983. Appendix B displays a list of the years the respondents began their first post-graduation jobs, as well as the number of graduates who responded with a particular year on the survey's second question. An analysis from data gathered using items 2, 3a, 3b, 4, 6 and 16 is also included in Appendix B. Appendix C is a collection of verbatim, miscellaneous comments, written by the respondents. These data are from items 75 and 76, as well as from the "Additional Comments if you desire" section.

The respondents indicated a number of different kinds of positions which they entered into at their first post-graduation employment. In fact, the forty-five respondents indicated thirty-four different positions. These data were gathered using item 3a.

According to responses to item 3b, the respondents' current position titles are very similar to the entry level jobs. The forty-five respondents indicated thirty-eight different position titles where they are employed.

As recorded by the responses to item 4, the forty-five respondents all currently work for different companies throughout the United States.

When asked information about the company which employs them, 58 percent are employed by the parent company, 9 percent work for a sister company and 13 percent indicated that they do not work for a parent or a sister company. This could mean that the women work for a school, or city, state or the national government. In any case, they are not working for a private company.

Item 6 was directed at the major product produced by the respondents' employing companies. The forty-five respondents indicated thirty-one different kinds of products.

When the graduates were asked in item 7 whether they are employed part-time, flex-time or full time thirty-nine or 87 percent responded to being employed full time, two or 4 percent are employed part-time and two or 4 percent are employed on flex-time.

The researcher was interested in determining the company size where the graduates are currently employed. Table I has been provided so the reader may examine the various company sizes and the number of respondents in the

many company sizes. This information was gathered using item 8.

TABLE I

SIZE OF FIRMS REPRESENTED BY RESPONDENTS

Size of Firm	Respondents	Percentage
1-5	4	9
6-10	0	--
11-25	7	15
26-50	4	9
51-70	2	4
71-99	2	4
100-500	9	20
over 500	4	9

Analysis of the information in Table I indicates that 24 percent of the respondents are employed by a company of between one and twenty-five employees. Nine respondents, or 20 percent, are working in companies with 100 to 500 employees while 18 percent of the women work in companies with twenty-six to ninety-nine employees.

Length of employment, at both, the respondents' first post-graduation job and their current job, was of interest to the investigator. These data, collected in items 9 and 11, have been recorded in Table II.

TABLE II

LENGTH OF EMPLOYMENT

Yrs. of Employment	First Job # Respondents	First Job %	Current Job # Respondents	Current Job %
0-1	4	9	7	16
1+-3	20	44	20	44
4-6	11	24	6	3
7-10	2	4	1	2
11-13	3	7	2	4

An analysis of the employment data revealed that twenty women, or 44 percent, were employed at their first post-graduation job for between one and three years. That same percentage of women have also been employed at their current job for one to three years.

According to the respondents' replies to question 17, 29 percent, or thirteen women, have not held a comparable position at any other job. On the other hand, 27 percent, or twelve technologists, have held one previous similar position. Seven respondents, or 16 percent, have held two comparable positions with four women, or 9 percent, reporting that they have held three comparable positions. In relation to the number of persons who are currently supervisors, item 10, which dealt with this matter, was not

completed by 51 percent of the respondents. Twenty-four percent of those who did answer stated that they were not supervisors. An analysis of this information is depicted in Table III.

TABLE III

NUMBER OF EMPLOYEES SUPERVISED BY RESPONDENTS

Women Each Supervises	Men Each Supervises
5	1
1	5
3	3
2	1
10	4
1	0
1	0
3	0
2	0
3	0

Eleven women, or 24 percent, supervise at least one other person. These supervisors reported that they are responsible for one to fourteen other employees at their current position.

The researcher was interested in both, the entry level and current level of the respondents' salaries. These data were gathered using items 13 and 14. Table IV displays an analysis of the data obtained from those items.

TABLE IV

ENTRY LEVEL AND CURRENT LEVEL OF RESPONDENTS'SALARIES

Salary Level	1st Position	%	Current Position	%
5000-7999	1	2	--	--
8000-11999	6	13	3	7
12000-15999	8	18	3	7
16000-17999	7	16	5	11
18000-19999	5	11	2	4
20000-21999	3	7	3	7
22000-25999	7	16	12	27
26000-29999	--	--	6	13
30000-33999	1	2	3	7
34000-37999	--	--	--	--
38000-39999	--	--	1	2
40000-44999	--	--	3	7
45000-50000	--	--	1	2
Other	--	--	1	2

The researcher found that the majority of the women, 18 percent, began their first post-graduation job at a salary in the range from $12,000 to $15,999 per year. Sixteen percent responded that they began their first post-graduation job at $16,000 to $17,999 and yet, another 16 percent began with a yearly salary between $22,000 and $25,999.

Table IV clearly shows that the majority, twelve women or 27 percent of the female graduates of Pittsburg State University School of Technology and Applied Science are currently yielding an annual salary of between $22,000 and $25,999. Six of the respondents, or 13 percent, reported making an annual salary of between $26,000 and $29,999.

The locations of the United States cities the respondents reside in was gathered utilizing item 15. The 171 survey instruments that were dispersed went to addresses throughout the United States.

TABLE V

LOCATION OF U.S. CITY WHERE RESIDING

General Area of Residence in U.S.	# Respondents	%
North East	2	4
South East	1	2
East Central	2	4
North West	0	--
WestCentral	2	4
North Central	0	--
Mid West	28	62
South Central	4	9

Twenty-eight women, or 62 percent of the respondents, live in the Midwest with four graduates, or 9 percent, living in the South Central portion of the United States. Two respondents, or 4 percent, live in one of each of the following general locations of the United States: North East, East Central and West Central. One woman lives in The South Eastern portion of the United States.

Regarding the populations of the cities where the respondents are currently residing, there was a wide range of towns with populations of 5,000 to cities with as large a population as 3,500,000. This information is from the respondents' answers to item 16.

In relation to the number of promotions the respondents have received at their present place of employment, an analysis of the data from item 18 showed that 29 percent have not received a promotion. Twenty-seven percent have obtained one promotion, 16 percent have earned two promotions and 11 percent have merited three promotions. One respondent said the question was not applicable to her, while one woman reported purchasing a one-third ownership in a company upon graduation from Pittsburg State University.

Twenty-one respondents or 47 percent recorded, in regards to item 19, that neither, promotions of a horizontal or vertical nature, apply to their employment. Ten women, or 22 percent, have jobs where promotions are of a vertical nature while five women, or 11 percent, stated that their promotions are of a horizontal nature. Two technologists reported that their promotions are of both, a horizontal and vertical nature.

When asked about the probationary period at their current job the answers varied far more than anticipated by the researcher. The answers varied from none, to not long, to five years. Six of the respondents, or 13 percent, wrote that there was no probationary period for them. Sixteen women, or 36 percent, had a probationary period that was from thirty to ninety days long. Ten technologists, or 22 percent, were on probation from over ninety days up to one year and one woman reported being on probation for a five year period.

In response to item 21, twenty-three respondents, or 51 percent, reported that they sought the position where they are currently employed and ten others, or 22 percent, said that their employer sought them for their current position. Five women wrote that their employer sought them for the job as they were seeking the job they now have, while two ladies said that this question was not applicable to them.

The researcher thought it important to know whether the respondents are currently in "dead-end" jobs or jobs where there is a career ladder to climb. Twenty-three women, or 51 percent, responded that there is a career ladder to climb at the jobs where they are currently employed but, fourteen, or 31 percent, stated that they are currently working at a job that is "dead-end." One respondent wrote that she has "topped out" on the ladder at her current position and yet another recorded that this question was not applicable in her situation.

Items 23-36 pertained to the fringe benefits that each respondent's employer provides for her. Eighteen respondents, or 40 percent, stated that their employers provide paid health insurance for them only. One respondent reported that her employer pays a portion of her health insurance. Nineteen women, or 42 percent, have employers who pay health insurance for the employee and all family members but, two others have employers who pay a portion of the insurance for an employee and all of her family. Eleven

percent, or five women, recorded that there are other riders included with their health insurance. Thirty respondents, or 67 percent, have life insurance paid for them. Seventy-six percent, or thirty-four ladies, are allowed paid sick leave with thirty-five, or 78 percent, earning a paid vacation.

The length of vacations varied greatly in length. The majority, sixteen or 36 percent, earn an annual two week vacation. Nine percent receive one week's vacation; 7 percent get ten days of vacation; one lady receives 12 days vacation; another woman gets 15 days; and yet another one is allowed 20 days of vacation; four women, 9 percent, receive three weeks off; and three women, or 7 percent, take four weeks of vacation annually.

Thirty-five women, or 78 percent, receive paid holiday leave. Only one woman, or 2 percent of the respondents, benefits from an employer subsidized child care program. There are eleven ladies, or 24 percent, that have access to an expense account while nineteen women, or 42 percent, are allowed a traveling expense account. An extended educational program is a fringe benefit for sixteen of the respondents, or 36 percent. Employers provide retirement programs for 58 percent of the respondents, or twenty-six women. Moving expenses are reported as a fringe benefit by eight of the women, or 18 percent. Overtime is available for twenty-three of the respondents, or 51 percent, but only eight women, or 18 percent, are provided with double time wages.

The age of the respondents was another important facet

of this research. This data was collected using item 37. The majority of the respondents, seventeen women, or 38 percent, were between the ages of twenty-six and thirty. There were eight respondents, or 18 percent, between the ages of twenty-four and twenty-five; five, or 11 percent, were between thirty-two and thirty-five; three women, or 7 percent, were between thirty-six and forty; and seven ladies, or 16 percent, were over forty years of age.

TABLE VI

AGES OF RESPONDENTS

Ages of Respondents	Number of Women	Percentage
24	4	9
25	4	9
26	6	13
27	2	4
28	6	13
29	2	4
30	1	2
32	2	4
34	2	4
35	1	2
39	2	4
40	1	2
over 40	7	16

According to an analysis of the available data, the respondents who have recorded being forty years of age and older either returned to pursue a different career or to study for a more advanced degree.

An analysis of table VII depicts the years the respondents graduated from Pittsburg State University. This data were compiled from item 38.

TABLE VII

GRADUATION DATE

Year of Graduation	Number of Respondents	Percentage
1973	1	2
1976	1	2
1977	0	--
1978	2	4
1979	1	2
1980	1	2
1981	1	2
1982	5	11
1983	7	16
1984	7	16
1985	9	20
1986	3	7
1987	2	4
1988	1	2

Responses were received from nine women, or 20 percent of the 1985 graduates; seven, or 16 percent of the women are each from the classes of 1983 and class of 1984; five women from 1981; four technologists from 1982; three ladies from 1986; two respondents, one from each of the graduating classes of 1978 and 1987; one graduate each, from the class of 1976, class of 1979, class of 1980 and class of 1988; and no responses from the class of 1977.

The marital status of each of the respondents was recorded items numbered 39-42. According to an analysis of

the data received from the respondents, 71 percent, or thirty-two of the women are married at the present time. Nine ladies, or 20 percent, reported their marital status as single. One respondent was divorced and one reported her marital status as separated.

An analysis of the data from item 43 are recorded in Table VIII. These data pertain to the respondents' children's ages. Fifteen, or 33 percent, of the respondents reported having at least one child. Only one of the women had more than two children. That respondent has seven children.

TABLE VIII

CHILDREN'S AGES

Ages of Children	Number	Percent
Birth - 1 year	5	19
2 yrs.	2	8
3 yrs.	1	4
4 yrs.	1	4
5 yrs.	0	--
6 yrs.	2	8
7-9 yrs.	1	4
10-12 yrs.	1	4
13-15 yrs.	2	8
16-18 yrs.	2	8
19-21 yrs.	0	--
21 and older	9	35

Twelve of the fifteen responding mothers, or 80 percent, reported that their employers have a favorable view of pregnancy leave while only two women, or 13 percent of

the fifteen mothers have employers who view pregnancy leave unfavorably.

The total of children accounted for by the fifteen responding mothers was twenty-six. Of the twenty-six children that respondents accounted for, nine, or 35 percent, are twenty-one years of age or older. Nine of the mothers recorded having only one child, with seven of those children being three years of age or younger.

An analysis of the data from item 44 showed that twelve of these fifteen mothers, or 80 percent, have employers that view pregnancy leave favorably while two of the women, or 13 percent, report an employer with an unfavorable view of pregnancy leave.

In regards to the length of pregnancy leave taken with the birth of each child, the answers varied from, "I quit my job," to "My pregnancy was termed a disability," to one year's leave. According to an analysis of the data from item 45, four of the first time mothers, or 27 percent, took six weeks of pregnancy leave, one mother took two months, another mother took between six and nine months leave and yet, another two mothers took between ten and twelve months. Two mothers recorded having a second child with whom they took six to eight weeks of pregnancy leave.

In response to item 46, 53 percent of the women or eight of the mothers reported that they do <u>not</u> have paid maternity leave while the other 47 percent of the ladies recorded that their employers offer paid maternity leave for

a period of six to eight weeks. One mother used up her sick leave in order to have time off with the birth of her child.

Thirteen of the women stated that their employers do guarantee that their position will be held, through their maternity leave, for them to return to after having a baby. One respondent said her job was not held for her to return to after having her child.

In response to item 48, 60 percent of the women, or nine of the fifteen mothers stayed in the same job while pregnant and did not have to be relocated in the job shop due to hazards to the mother or her baby. However, one of the mothers did have to be relocated.

The analysis of the data shown in Table IX, regarding the respondents' child care arrangements and costs, was developed from items 49 and 50.

TABLE IX

RESPONDENTS' CHILD CARE COSTS

Cost for Child Care		Number of Mothers	Percent
By the Hour	$1.00	1	7
	$1.35	1	7
By the Day	$6.00	1	7
	$8.00	1	7
	$12.00/2 children	1	7
By the Week	$62.50	1	7
	$80.00	1	7
	$102.00	1	7

Of the fifteen respondents that have children, six women, or 40 percent, indicated that their children are cared for by a private party while four ladies, or 27 percent, reported that they take their children to day care facilities. One respondent's husband takes care of her child and another has a private party come into her home.

The cost for child care varied a great deal, from $40 per week to $80 per week to $102 per week, per child. One hundred percent of the respondents answered that their employer did not assist in any way with providing or supporting any kind of a child care situation.

Items 51-52 addressed the respondents' lodging situations. Table X has been provided so that the reader can compare the researcher's findings.

TABLE X

HOUSING ARRANGEMENTS

Lodging and Arrangements	Number of Women	%
Apartment	5	11
Single Family Dwelling	33	73
Condominium	1	2
Duplex	2	4
Sharing	3	7
Renting	6	13
Buying	29	64
Own Property Outright	3	7
Supplied By Husband's Employer	1	2

Thirty-three, or 73 percent of the respondents live in a single family dwelling with twenty-nine women reporting that they are in the process of purchasing their living quarters. Eleven percent of the respondents, or five women, live in an apartment, two live in a duplex and one resides in a condominium. One respondent has her housing supplied for her by her husband's employer. Three women, or 7 percent of the respondents, own their living quarters outright. Only thirteen percent, or six respondents, are renting their residence with three women living in a "shared" living situation.

The respondents recorded the type of clothing they are expected to wear on the job in item 53. Fifty-eight percent said they wear dressy casual clothing on the job, 27 percent wear jeans, 24 percent wear a conservative suit, 4 percent wear uniforms, 2 percent wear a shop coat and one respondent reported wearing "anything."

When questioned, in items 54 and 55, about a uniform allowance, 64 percent recorded they did not have one and 4 percent do have a uniform allowance. One percent of the respondents have a paid uniform allowance.

Items 56-62 were used to identify information pertaining to the educational backgrounds of the respondents. The forty-five women reported nineteen different majors. Ten of the respondents, or 22 percent, have majors in Printing Technology; six graduated with a major in Printing Management; five have a major in

Commercial Graphics; and four were Vocational Technical Education majors. The remaining respondents' answers varied greatly.

Minors were also diverse, ranging from Computing to Safety to Mathematics to Spanish. Eighteen percent of the respondents had minors in either Business or Business Administration. Other minors mentioned were French, Art, Printing and Business Management.

Twenty-one of the women, or 47 percent, reported earning their Bachelor of Science degrees in Technology. Other degrees mentioned were earned in Nursing, Fine Arts, Arts and Sciences, Engineering Technology. One respondent mentioned earning an Associate of Arts and Sciences degree.

Six of the seven women, who have earned a Master of Science degree, reported that their majors are in Technology. The other woman has a Master of Science degree with a major in Business Administration.

Four of the respondents reported that they have attended a vocational/technical school. Fields of study included Graphic Arts, Cosmetology, Business and Nursing. Years the women mentioned in connection with graduating from these schools were 1965, 1968, 1976 and 1983.

The researcher asked items 63-68 in an effort to establish information pertaining to the respondents' pre-college home environments and family structures. An analysis of the respondents' answers to these questions has been recorded in the following table.

TABLE XI

HOME ENVIRONMENT AND STRUCTURE

Environment/Structure	Number of Respondents	%
Single Parent Family	2	4
Traditional Two Parent Family	41	91
Extended Family	2	4
Defined Parental Roles		
Yes	34	76
No	8	22
Risk Taking		
Approved	32	71
Not Approved	10	22
Structure and Control		
Yes	39	87
No	5	11
Received Encouragement No Matter What Your Interests		
Yes	36	80
No	8	18

The majority, forty-one of the forty-five answering respondents, or 91 percent, were reared in a traditional two-parent family. Two of the respondents grew up in a single parent household while two others were raised in an extended family situation.

Thirty-four of the respondents, or 76 percent, were reared in families where the home environment was of a traditional structure, with definite, traditional lines having both, male and female role models. Nine of the women,

or 22 percent, said they were not raised in homes with this particular traditional structure.

Seventy-one percent of the graduates agreed that risk taking was approved in the home where they grew up, while 22 percent did not believe that risk taking was acceptable in their home environment.

Thirty-nine respondents, or 87 percent, reported that they were raised in homes where there was a good deal of control but the other 11 percent said they were not reared in a home with much structure or control.

Thirty-six respondents, or 80 percent, believe they received a good deal of encouragement, no matter what their interests. Eight women, or 18 percent, were not encouraged to pursue just any interest they had.

A majority of the respondents answering item 68, twenty-five or 60 percent, grew up in a small town setting; nine women or 20 percent, recorded spending most of their younger years in a rural area; eight women, 18 percent, made their home in a large city and another 9 percent had homes in a suburb.

Each respondent was asked who the people were that lent them support and gave them encouragement as they made their career choice in a non-traditional field or an area closely related to a non-traditional field. They were given several choices to select from and were asked to mark each one that pertained to their particular instance. The researcher found the results very interesting, but not

really surprising. The information for Table XII was gathered using item 69.

TABLE XII

SOURCES OF ENCOURAGEMENT RELATED TO CAREER CHOICE

Support and Encouragement From	# of Women	Percentage
Mother	34	76
Father	34	76
Teacher	20	44
Spouse	10	22
Friend	10	22
Other Family	2	4
Peers	1	2
My Child	1	2

The data the researcher analyzed showed that the respondents received the majority of their support and encouragement from their parents, or people they were willing to call "mother and father." There were thirty-four women, or 76 percent, who recorded their parents as sources of support and encouragement. It was no surprise to discover that next to their parents, 44 percent of the women received a great deal of support from their teachers. Other results from these data are recorded in Table XII for the reader's examination.

Table XIII exhibits data from item 70. The female graduates were asked to record their age when they made the decision to begin their quest to pursue their careers.

TABLE XIII

AGE CAREER CHOICE WAS MADE

Age	Number of Respondents	Percentage
13	1	2
16	3	7
17	6	13
18	5	11
19	6	13
20	8	18
21	2	4
24	1	2
25	2	4
over 25	7	16

The average age the majority of those responding female graduates were when they decided to study for their careers, was twenty years. Eight women, or 16 percent, were 20 years old when they made their career decisions. The age for this major career decision varied greatly among the respondents, from thirteen years to forty years old. Twenty-six of the women stated that their career choices were planned or deliberate ones, while sixteen of them, or 36 percent reported that they just "fell into it."

Regarding promotions, the following table has been constructed to illustrate an analysis of the data from respondents' replies to item 71.

TABLE XIV

REGARDING PROMOTIONS

Situation	# of Respondents	Percentage
No Problems	20	44
Earned Promotions	19	42
Passed Over Because of Gender	2	4
Received Because of Gender	0	--
None Available	1	2

Twenty women or 44 percent, said they have not experienced any difficulties in obtaining promotions. Forty-two percent, or nineteen women, reported earning promotions at their jobs. One woman indicated that she had been passed over for a promotion because she is a female; one recorded that there are no promotions available at her current place of employment and yet another indicated that she felt that she was not well accepted in industry when applying for jobs, let alone, in asking for a promotion. None of the respondents felt like they had been given a promotion because of their gender.

Respondents seemed, overall, to be happy with their career choices. According to the data gathered using item 72, thirty-seven women, or 82 percent, recorded being happy with their career choices. Four of the graduates, or 9 percent, wish they could change the career choices they made. Two women added that they wish they could changed their choices sometimes and two women asked to be considered undecided on this issue.

The respondents were asked, in item 73, to rate how their college degree work prepared them for the jobs they have had and now have. Twenty-four women, or 53 percent of the respondents, stated that they had been adequately prepared to take the jobs they have had since graduation, while fourteen women, or 31 percent, felt that their college education was superior preparation for their post-graduation job/s. Five graduates, 11 percent, indicated that they had inferior college preparation for their job/s and one woman reported that this question did not apply to her.

According to the information from item 74, forty-two women, or 93 percent, would advise other women to enter a field in technology or a technology related field in pursuit of a career. However, there were two graduates that would not recommend technology or a technology related field as a career choice for other women.

The researcher was interested in the reasons the female graduates chose a career in technology or a related field rather than a field that is traditionally female dominated. The nature of item 75 left the field wide open for a menagerie of answers. Surprisingly enough, even though the respondents chose careers in very different fields, their reasons for choosing their technology or technology related careers were very much the same or parallel.

Item 76 addressed the issue of returning to Pittsburg State University for additional education. If the respondents had returned for more education the researcher

was interested in their reasons. Again, the answers were many and varied.

Because of the sex equity issue, the researcher was interested in the other minorites that might be included within this group of women. Thus, the reason for item 77, pertaining to the respondents' ethnic backgrounds. In response, 98 percent or forty-four of the women declared a Caucasian background and one woman reported being an American Indian.

The researcher opened up the field for additional comments at the end of the survey instrument. Once again, there were many more comments offered than expected by the researcher. They were numerous and the variety of comments was very interesting. The reader can locate and examine these comments in Appendix C.

CHAPTER V

SUMMARY

This chapter summarizes the industrial status of the Pittsburg State University School of Technology and Applied Science female graduates of classes that graduated from the years 1976 to 1987. The data that were collected showed that the majority of the graduates are gainfully employed, most in full-time positions that utilized their college educations.

The large percentage of the respondents work, presently in firms with eleven to twenty-five employees or 201 to 500 employees. Most have been at their present job from one to three years, with over half of the women in non-supervisory positions. A lot of the respondents, most of whom call the Mid West area of the United States home, earn between $22,000 and $25,999, annually.

The typical probationary period was thirty to ninety days. Generally speaking, over one-half of the respondents sought the employment they work at presently.

The fringe benefits employers are providing for lady technologists are average. Those benefits listed most often were health insurance, life insurance, sick leave, paid vacation, travel expenses, paid holidays and an expense account.

A major portion of respondents were twenty-six or

twenty-eight years of age with many being married 1985 graduates.

Most of the women reported their employers having a favorable outlook on pregnancy leave with the average leave ranging from six to eight weeks. The respondents' children fell into a wide range of ages from only a few weeks to over twenty-one years of age. Most of the children, who need day care while their mother is at her job, are taken care of by a private party with the cost averaging from $1.00 per day to $102.00 per week.

Many respondents are purchasing single family dwellings with most of the women reporting that they wear dressy casual clothing on the job.

Approximately 100 of the instruments were sent to Printing majors so it stands to reason that they were the majority of the respondents holding technology degrees.

A majority of the respondents were reared in traditional two-parent families with defined male/female parental roles, approved risk taking, definite structure and control and encouragement no matter what interests were pursued. Support and encouragement came from parents, teachers, spouses, friends, other family members, peers and children.

Most of the women who responded were twenty years old when they made their career choices and they planned the choices they made. Promotions did not seem to be a problem for the respondents and for the most part they

are happy with their choices. Many of the women said their college education was adequate preparation for their post-graduation job/s. A majority of the respondents would recommend a career in a non-traditional field for any interested woman.

Forty-four of the forty-five respondents reported being Caucasian. The other respondent is an American Indian.

CHAPTER VI

RECOMMENDATIONS

Even though the majority of the women who responded seemed happy and satisfied with their career decisions and present employment, industry, as a whole, needs to keep a constant watch on today's issues of equality, be it relative to gender, nationality, age or any similar issue.

This is the year, **1988**. The researcher believes Pittsburg State University should be implementing more tactics to reach and recruit potential female students to educate for non-traditional careers. Along this line, a program designed to reach those women, could be enacted as an outreach. The researcher has gathered many facts that could be incorporated into a brochure to encourage female participation in non-traditional programs.

The researcher recommends to the School of Technology and Applied Science that a constant follow-up program should be implemented to give support to graduates from Pittsburg State University.

There are many services and aids available through the Equal Opportunity and Affirmative Action Office and the Career Planning and Placement Office. The researcher recommends that more of the University instructors encourage their students to use the University facilities.

APPENDIX A

Pittsburg State University
Department of Printing • Pittsburg, Kansas 66762 • 316/231-7000, Ext. 4419

DATE: October 18, 1988

TO: PSU Female School of Technology and Applied Science Graduates

RE: Study to Determine the Industrial Status of PSU Female School of Technology Graduates

Included with this letter you will find a survey instrument that is being used to gather information about experiences with employment and lifestyle after graduation from Pittsburg State University. This project is intended to identify the industrial status of female PSU graduates with degrees in technology or technology related fields.

All the information you supply will remain confidential. Your information will be combined with the other respondents'. Compiled results will be available to you upon request. Should you desire this information, please submit a letter which includes your name and address and mail in a separate envelope to insure your confidentiality.

Coding information at the top right hand corner of the page is to facilitate the data processing and follow-up of the respondents' responses. This information will not be used for identification purposes.

It would be appreciated if you would complete the survey and return it in the business reply envelope as soon as possible, but before November 1, 1988.

Thank you very much for your cooperation.

Sincerely,

Cyndi Selzer

Cyndi Selzer
Graduate Researcher

Frank M. Slapar

Frank M. Slapar, Ph.D.
Graduate Research Advisor

SEX EQUITY FOR WOMEN IN TECHNOLOGY SURVEY

PRESENT EMPLOYMENT

1. Are you currently employed? Yes ___ No ___ **If not**, go to question #37
2. Date your first post-graduation job began _____ 3a. Entry level at that job _____
3b. Position Title _____ 4. Company Name _____
5. Is this the parent company or a sister company? _____
6. Major Product of This Company? _____
7. Is this position: full-time _____ part-time _____ shared _____ flex-time _____
8. Number of employees at this location? _____ 9. How long employed with this company _____
10. If management, how many people do you supervise? Women (#) _____ Men (#) _____
11. How long in current position? _____ 12. Date you began your first job after graduation _____

13. Entry Salary Level (annual)? (*Circle Salary Range*)

$ 5,000 - 7,999	26,000 - 29,999
8,000 - 11,999	30,000 - 33,999
12,000 - 15,999	34,000 - 37,999
16,000 - 17,999	38,000 - 39,999
18,000 - 19,999	40,000 - 44,999
20,000 - 21,999	45,000 - 50,000
22,000 - 25,999	Other

14. Present Salary Level (annual)? (*Circle Salary Range*)

$ 5,000 - 7,999	26,000 - 29,999
8,000 - 11,999	30,000 - 33,999
12,000 - 15,999	34,000 - 37,999
16,000 - 17,999	38,000 - 39,999
18,000 - 19,999	40,000 - 44,999
20,000 - 21,999	45,000 - 50,000
22,000 - 25,999	Other

15. Location of U.S. city you live in? (*Circle City Location*)

Northeast	West Central
Southeast	Northcentral
East Central	Midwest
Northwest	Southcentral

16. What is the population of the city in which you work? _____
17. How many companies have you worked for in a position similar to the position that you now hold? _____

Concerning Promotions

18. How many promotions have you received at this company? _____
19. Were the promotions of a horizontal or vertical nature? _____ does not apply ___
20. How long was your probationary period? _____
21. Did you seek out this position or did your employer seek you out? _____
22. Is your job a "dead-end" job or is there a career ladder to climb? _____

Fringe Benefits (Please check the benefits your employers provides)

23. a. Paid Health Insurance for Employee ONLY ____
    b. Paid Health Insurance for ALL Family Members ____
    c. Other Riders Included with Policy ____
24. Life Insurance ____ 25. Paid Sick Leave ____ 26. Paid Vacation _____ 27. Length of vacation _____ 28. Paid Holiday Leave ___ 29. Subsidized Child Care _____
30. Expense Account ___ 31. Traveling Expense Account ___ 32. Extended Educational Program ___
33. Retirement Program ___ 34. Moving Expenses ___ 35. Overtime ___ 36. Double Time _____

PRESENT LIFESTYLE

37. Age ____ 38. PSU Date of Graduation _____ 39. Married ____ 40. Single ___
41. Divorced ___ 42. Separated _____

CONTINUE ON REVERSE SIDE

43. If you have children, what are their ages? _____ _____ _____ _____ _____
44. View of employer at time of children's birth with regard to pregnancy leave?
Favorable? _____ Unfavorable? _____.
45. Pregnancy leave--How long did you take with your: 1st child _____ 2nd _____
3rd _____ 4th _____ 5th _____
46. Paid or unpaid maternity leave? Paid _____ Unpaid _____
47. Did your employer guarantee your position would be held for you to return to? yes ___ no ___
48. While pregnant, did you stay in the same position in your job or did you have to be relocated in the job shop due to hazards to you or your baby? stayed _____ moved _____

Child Care

49. Cost per hr.? _____ day? _____ or week? _____

50. Furnished by: employer? _____ day care center? _____
private party? _____ in my home? _____

***Housing** (please check one)*

51. Apartment _____
Single family dwelling _____
Condo _____
Duplex _____

52. Are you sharing? _____
Are you renting? _____
Are you buying? _____

Dress code on the job

53. Jeans _____ Conservative suit _____ Dressy Casual _____ Shop Coat _____
54. Uniform allowance given? yes ____ no ____ 55. Paid ____ or Unpaid ____

EDUCATION

56. PSU Major _____ 57. PSU Minor _____
58. Undergraduate Degree(s) _____
59. Graduate degree(s) _____
60. Vocational Technical School at _____
61. Certificate/diploma in _____ 62. Yr. _____

Family

63. Home environment/structure: *(check one)* grew up in single parent family _____ Two parent family (mother and father) _____ extended family _____ other _____
64. Was the home environment of a traditional structure with definite lines of male/female roles? yes___ no ____
65. Was risk taking approved? yes __ no __
66. Was there a good deal of structure/control? yes ___ no ____
67. Did you receive a good deal of encouragement, whatever your interest? yes ____ no ____
68. The majority of your growing-up years were spent in which setting: rural ___ small town ___ large city ___ suburb ___

Career Choice (present)

69. You received support/encouragement from: (please circle) mother father teacher spouse other (example: friend) _____
70. Age when you made this career choice _____ This was a deliberate/planned choice _____
Just "fell into it" _____

Regarding promotions:

71. No problems _____ Earned promotions _____ passed over because being female_____
Received promotion because of being female _____
72. Happy with career choice _____ Wish to change career choice _____

Program Evaluation:

73. Would you say your college preparation for your jobs after graduation was: Superior _____ Adequate _____ Inferior _____ Does not apply _____
74. Would _____ , would not _____ advise other women to enter a technology field.
75. Why did you choose a career in technology or a technology related field rather than a traditionally female field?

76. If you have returned to PSU for additional education since receiving your bachelor degree, why?

77. Your ethnic background: (check one) Caucasian ____ Black American ____ Asian ____ American Indian ____ Hispanic ____

Additional comments if you desire:

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APPENDIX B

DATE FIRST POST-GRADUATION JOB BEGAN

Item 2

YEAR	#WOMEN
1965	1
1968	1
1972	1
1973	1
1977	1
1978	1
1979	1
1980	3
1981	1
1982	2
1983	3
1984	7
1985	6
1986	3
1987	5
1988	1

ENTRY LEVEL OF FIRST POST-GRADUATION JOB

Item 3a

Unless otherwise noted out to the right side of the position title assume that there was only one such position recorded from the data received.

Laborer
Graphic Artist
Film Assembly
Report to V.P. of Sales
Owner Relations Analyst
Staff Customer Engineer
Phone Comp. Engineer
Costing Supervisor
Production
Mid-Management
Health Careers Coordinator
Administrative Assistant
Engineering Associate
Part-Time Typesetter
Sales Clerk/Visual Display
GS-5
Instructor-3
Staff Nurse
C
Typesetter
Estimator
Paste-Up Artist
Engineer(In Training)
Trainee
Supervisor
Sales-2
Management
Legal Secretary
Coordinator
Advertiser/Artist
Assistant Instructor

CURRENT POSITION TITLE

Item 3b

Unless otherwise noted out to the right side of the position assume that there was only one such position recorded according to the data received.

Engineering Technician
Graphic Arts Supervisor
Graphic Communications Specialist
Warranty Claims Manager
Price and Order Entry
Estimator/Production Manager
Customer Engineer
Paste-Up Artist
Costing Supervisor
Systems Operator
Assistant Professor
Intermediate Engineering Aide
Customer Service/Estimator
Composition Artist
Senior Manager
Illustrator
Account Executive
Sales Representative
Network Service Supervisor
Nursing Instructor
Stripper
Instructor-2
Senior Engineer
Plans Examiner
Letter Carrier
Estimator-2
Pre-Press Trainee
Project Engineer
Job Coordinator
Engineer
Quality Control Supervisor
Health Careers Coordinator
Engineering Associate
Editor
Typesetter
Legal Secretary
Pre-Press Supervisor

COMPANY NAMES

Item 4

State of Kansas

Adams Business Forms

Colanco Color Corporation

General Dynamics

Data Documents

Hewlett-Packard

Journal World Company

Heart of America Business Forms

Pepco/Coloright

Area Vocational/Technical School

Missouri Highway/Transportation

Women's Yellow Pages

Interstate Printing

Southwest Kansas AVTS

KSC - Pittsburg

MSC- Fort Leavenworth

Andrews Lipscomb Law Firm

Metropolitan Insurance Company

Southwestern Bell Telephone

Nett Printing

Labette Community College

Van Chevrolet Company

City of Lenexa

U. S. Post Office

Martin K. Eby Construction

Spangler Printers

Courier Corporation

U. S. Playing Card Company

MSSC

Linbeck Construction Corp.

Peat Marwick

Par Forms Corporation

A T & T

Macy's

Words and Pictures

Quick Silver Graphix, Inc.

Garlich Printing

SACS, Inc.

MAJOR PRODUCT OF THE COMPANY

Item 6

Unless otherwise noted on the right side of the company product assume that there was only one respondent working for each company listed, according to the data analysis.

None-Coal Mine Regulators
4-Color Brochures and Catalogs
Education-3
Jet Aircraft
General Contractor
Newspaper
Printing-books, forms, directory
Paper Bags
Printing Film-Printed Material
Playing Cards
Graphic Art and Printed Forms
Advertising-3
Vugraph, Teaching Slides
Insurance
Newspaper Inserts
Business Forms-3
Automobile Dealership
Mail Delivery
Computers
Commercial Printing-3
Buildings
Printing-Film Work
Printed Matter
Printing
Components-PBX's
Retail
Law Firm
Phone Service

CITY POPULATIONS

Item 16

Unless otherwise noted to the right side of the figure given, assume that there was only one respondent from each of the town populations listed.

25,000	12,000
125,000	10,000
Kansas City-3	500,000
650,000	40,000-2
850,000	50,000
2,500,000-2	5,000
110,000	13,000
150,000	39,000
400,000	250,000-2
1,000,000+-2	20,000-2
350,000-2	15,000
19,000	28,000
3,500,000	1,500,000
34,000	2,000,000

APPENDIX C

THE REASONS RESPONDENTS CHOSE A CAREER IN TECHNOLOGY

Item 75

Personal Interests.

Hands-on and technical expertise.

Needed a valuable, stable skill, no matter what the economy does.

Educational background, PSU's reputation, location.

Didn't think being female would be a problem.

Better pay, interest in automotive technology, something "different".

Wanted more than traditional jobs provided, needed a challenge.

Demand for women and the pay.

Thought I'd always be able to find a position - technical, management, production or otherwise.

None of the traditionally female fields interested me.

Better chances of a good paying job - didn't like "traditional" choices.

Family tradition - better opportunity for higher pay in nontrational area.

It was interesting with many, many areas - still a man's field.

Encouraged by another female technologist, lack of women made me even more determined to succeed.

Not raised to follow traditional roles - learned to be an individual and make decisions on my own.

Excellent program in high school, run by a Pittsburg State University graduate.

I like technology and working with my hands. I like hard work and a challenge. Technology is ever-changing and exciting.

Thought the pay would be better - different than I expected.

I need a more profitable career with better working conditions.

Enjoyed the work and creating new things.

The Bachelor of Science degree in Vocational Technical Education allowed me a degree area to enhance the support field of teaching in a college.

Needed Technical Teacher Education to teach in a vocational setting.

More interesting and challenging - more opportunities with this degree.

More challenging - wanted to work outside.

Interesting - though the pay, career opportunities and choices were there.

That is where my interests and talents lie.

Already had a printing background so I went back to school at age 32.

Because I saw Linda Grilz, my boss, in an untraditional field and thought it's be easier to move up with less competition.

Industry and school are MILES apart, don't believe in a 4-year printing degree - NO help from placement or in job search.

I've always been interested in the area I chose - it never entered my mind to choose a traditionally female job.

Enjoyed it.

Because of previous printing experience.

I was interested in commercial graphics.

Technology angle seemed to be the best way to use my art interests.

Excited about teaching word processing. -Love computers and progress!

Always interested in art - thought this direction would open more doors for me rather than being a "starving artist."

More interested in traditionally "male" jobs.

Felt I'd be at an advantage in a male employment base job when looking for employment.

I am mechanically inclined and enjoyed my studies.

Wished to go into art but thought printing would offer several options.

More money, more challenge, personal satisfaction at knowing a skill to fall back on.

WHY HAVE YOU SOUGHT ADDITIONAL EDUCATION SINCE GRADUATING FROM PSU?

Item 76

Job-related training.

Needed a Master of Science degree to be able to teach.

Wanted a teaching certificate - had an admiration for instructors.

Needed management to go with my accounting and law backgrounds.

Haven't, but thought about it in Marketing and Research for printing.

Married, makes it tough to get back.

Not needed at present.

Unable to find employment in woods technology - so returned for teaching degree and now I teach 4th grade.

To be prepared for teaching at a college level.

No. There's NO way! I'll go to the University where I reside.

No -- It's too far away.

Started on a business master's, but didn't have enough time to devote to it.

To make a change in my present job.

Haven't, but I will, to get a master's, someday.

ADDITIONAL COMMENTS

Questions a bit confusing.

Wished the researcher had put ballot boxes by the choices.

Should be told in school to expect rejection in this man's world.

People have great respect for the PSU automotive technology program, husband gets transferred a lot. Jobs are easy to find -- most women NOT as lucky.

Questions 2-12 are misleading, not sure how to answer.

Questions confusing and not specific.

I worked for the Dean of the School of Technology - that's how I found out what programs were offered.

Most of my fellow workers were men (20+ year veterans) who were able to make the work environment quite uncomfortable.

I would like to return to college for a better marketable degree for women who want to excell.

At department functions, even though I was a guest, I was asked to be a hostess -- serve coffee and drinks. Only there for "a show." Never approached by faculty, like male peers, about job opportunities and contacts. -- Instructors shouldn't date students in their classes.

Women who are <u>good</u> at what they do will move faster because they stand out -- better organized and work harder and often for less money.

Good Luck! - I hope this is for real. Actually pretty happy at my job even though it is dead-end and frustrating.

Learned a great deal at Pittsburg State University and enjoyed my classes except for a few, due to teachers' methods.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. "Attracting Reentry Women to Engineering and Technology", ED 179461, 1978, 13.

2. Caughman, Alison Y., "Female Access to Careers in Engineering Technology, Exemplary Project in Vocational Education Conducted under Section 132 of Public Law 94-482," Final Report, Office of Education (DHEW), Washington, D.C., 1978, 7.

3. Eliason, Carol, "Sex Equity in the Eighties: A Study of Post-Secondary Vocational Institutional Practices", ED 198856, American Association of Community and Junior Colleges, Washington, D.C. Center for Women's Opportunities, Jan. 1981, 5.

4. Grilz, Linda. Personal interview. 25 January 1988.

5. Hargrave, Lou A. et. al., "Comprehensive Analysis of Follow-up Data for Students Enrolled in Traditional and Nontraditional Vocational and Technical Programs," ED 226236, Oklahoma State Department of Vocational Education, Stillwater, 1983, Tables.

6. Heller, Craig, "Masculine, Effects of Women's New Role in White Middle Class America from 1970-1979", Fifth International Symposium on Sex Education, ED 179461, Tel Aviv, Israel, June 1979, 12, 14, 22, 28.

7. Hemmens, Evelyn. Personal interview. 25 January 1988.

8. Herman, Edward F. et.al., "Women in Technology: The Evolution of a Simple Program That Works", ED 247964, American Educational Research Association, (April 1984), 3-45.

9. Kelly, Alison et.al., "Girls into Science and Technology, Final Report", ED 250203, 1984, 42.

10. Lex, Louise et.al., "Nontraditional Jobs and Training for Iowa Women," (A Program Model and Final Report), ED 203048, Iowa State Commission on the Status of Women, Des Moines, Sept. 1980, 95.

11. Millsap, Mary Ann, "Occupational Segregation: Analysis and Recommendations," Interdepartmental Committee on the Status of Women, ED 200713, Washington, D.C., Nov. 1978, 4.

12. Murray, Jeannette, "Non-traditional Trends: Women in Blue-Collar Trades", ED 270164, Honolulu Community College, Hawaii, April 1985, 1.

13. Packard, Beth, Summer Technical Institute Final Report, ED 282980, Arizona State Department of Education, Phoenix, 1986, 35-40.

14. Rakow, Lana F., "Feminist Approaches to Technology: Implications for Communications Scholarship", ED 275014, International Communication Association, Chicago, Illinois, May 1986.

15. Robinson, Delores M. et.al., "Identification and Assessment of Factors that Hinder, Prevent or Discourage Individuals from Enrolling in or Completing Nontraditional Programs in Postsecondary Institutions in Florida", ED 268274, (Final Report from Sept. 1, 1984 to Aug. 31, 1985), Florida State University, Tallahassee Department of Vocational Education, 8-9.

16. Ruina, Edith, "Wanted: More Women in Science and Technology", ED 204173, American Physical Society, New York, New York, 1981, 17.

17. Sandler, Ronnie, "When I Was Little I Didn't Know Girls Could Do That..." Women in Skilled Trades, ED 218470, Littleton, Hew Hampshire, June 1982, 5, 19.

18. Smith, Paula A., "The Labor Force Behavior of Sex Nontraditional Vocational Students: A Follow-up Assessment of Training for Nontraditional Occupations," Final Report, ED 220595, Oklahoma State University, Stillwater, June 1982, 7, 10.

19. Vequist, David. Personal interview. 25 January 1988.

20. Vocational Education Sex Equity Report: Post-Secondary 1983, Minnesota State Commission on the Economic Status of Women, ED 263301, St. Paul, Secondary 1983, Minnesota State Commission on the Economic Status of Women, St. Paul, (1983), 4.

21. "Working for You: A Guide to Employing Women in Nontraditional Jobs", ED 187923, Wider Opportunities for Women, Inc., Washington, D.C., (1979), 7-8.